Jefferson Pardomuan

· PhD in Computer Science

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Education

Tokyo Institute of Technology *Tokyo, Japan*

Ph.D Computer Science *10/2020-9/2023*

- Advisor: Prof. Hideki Koike
- Thesis: Shape-changing and Variable-stiffness Interface using Pneumatic Actuator

University of Electro-communication Tokyo *Tokyo, Japan*

M.Eng. Information System *4/2012-3/2014*

- Advisor: Prof. Hideki Koike
- Thesis: Variable-stiffness Deformable Interface using Vacuum Jamming

Polytechnic University Japan *Kanagawa, Japan*

B.Eng.(Hons) Electronic System *4/2008-3/2012*

- Minors in Vocational Training Instructor

Professional Experience

2023-2024	**Postdoctoral research fellow**, Tokyo Institute of Technology (Tokyo)
2019-2020	**Business Development Manager**, Pratama Graha Semesta Co. (Jakarta)
2015-2018	**Senior Process Engineer**, Sumitomo Electric Indonesia (Jakarta)
2014-2015	**Process Engineer**, Sumitomo Electric Japan (Osaka)

Publications

Journal

J. Pardomuan, N. Takahashi and H. Koike, "ASTRE: Prototyping Technique for Modular Soft Robots With Variable Stiffness," in IEEE Access, vol. 10, pp. 80495-80504, 2022, doi: 10.1109/ACCESS.2022.3194887.

T. Sato, **J. Pardomuan**, Y. Matoba and H. Koike, "ClaytricSurface: An Interactive Deformable Display with Dynamic Stiffness Control," in IEEE Computer Graphics and Applications, vol. 34, no. 3, pp. 59-67, May-June 2014, doi: 10.1109/MCG.2014.39.

Presentation

J. Pardomuan, S. Miyafuji, N. Takahashi and H. Koike, "VabricBeads : Variable Stiffness Structured Fabric using Artificial Muscle in Woven Beads", In Proceedings of CHI '24. May, 2024, Hawaii, US. 17 pages (Accept with minor revision)

Contributed Presentation

D. Saito, E. Nagatomo, **J. Pardomuan**, H. Koike, "Tracker: Model-Based Reinforcement Learning for Tracking Control of Human Finger Attached with Thin McKibben Muscles" In Proceedings of IEEE RO-MAN'23. Augustus, 2023, Busan, Korea. Accepted

L. Takagi, S. Miyafuji, **J. Pardomuan**, and H. Koike. "LUNAChair: Remote Wheelchair System Linking Users to Nearby People and Assistants." In Proceedings of AHs '23. March, 2023, Glasgow, UK. https://doi.org/10.1145/3582700.3582714

J. Hoffard, S. Miyafuji, **J. Pardomuan**, T. Sato, and H. Koike, "OmniTiles: A User-Customizable Display Using An Omni-Directional Camera Projector System." In Proceedings of ICAT-EGVE 2022, November, 2022, Yokohama, Japan.

Demo/Poster Presentation

J. Pardomuan, N. Takahashi and H. Koike. ”ASTREL: Prototyping Shape-changing Interface with Variable Stiffness Soft Robotics Module”. In Adjunct Proceedings of UIST ’22, October, 2022, Bend, OR, US. https://doi.org/10.1145/3526114.3558733

L. Takagi, S. Miyafuji, **J. Pardomuan**, and H. Koike. ”LUNAChair: Remote Wheelchair System that Links Up a Remote Caregiver and Wheelchair Surroundings. In Adjunct Proceedings of UIST ’22, October, 2022, Bend, OR, US.

J. Hoffard, S. Miyafuji, **J. Pardomuan**, T. Sato, and H. Koike. ”FroggyHand: A Gesture Based Control System for Omni-Directional Projections.” In Adjunct Proceedings of AHs ’22, March, 2022 Chiba, JP. https://doi.org/10.1145/3519391.3524027

J. Pardomuan, T. Sato, and H. Koike. ”LivingClay: particle actuation to control display volume and stiffness.” In Adjunct Proceedings of UIST ’13. October, 2022, St. Andrews, Scotland, UK https://doi.org/10.1145/2508468.2514731

In Prep

J. Pardomuan, S. Miyafuji, N. Takahashi and H. Koike, “Constructive Assembly Tools for Shape-changing and Variable Stiffness Interface”, 11 pages.

Awards, Fellowships, & Grants

2023	**Interaction Interactive Demo Award**, Interaction IPSJ2023, Tokyo, Japan
2020-2023	**MEXT Japan**, Scholarship Recipient
2013-2014	**East Asian Circle of Applied Technology Foundation** , Scholarship Recipient
2007-2012	**Japan Ministry of Health, Labour, and Welfare**, Scholarship Recipient

Teaching Experience

Fall 2022	**Data Structure and Algorithm**, Teaching Assistant
Fall 2021	**Data Structure and Algorithm**, Teaching Assistant
Spring 2022	**Procedural Programming Fundamentals**, Teaching Assistant
Fall 2020	**Human Computer Interaction**, Teaching Assistant

Advising

2022-2023	**Luna Takagi**, Master of Engineering in Computer Science
2022-2023	**Eri Nagatomo**, Bachelor of Engineering in Computer Science
2021-2022	**Jana Howard**, Master of Engineering in Computer Science

Referees

Prof. Hideki Koike — *+81 337261111*
Professor of Computer Science — *Tokyo Institute of Technology*
koike@c.titech.ac.jp

PhD and Master degree main supervisor

Prof. Toshiki Sato — *+81 761511111*
Associate Professor — *Japan Advanced Institute of Science and Technology*
tsato@jaist.ac.jp

Master degree co-supervisor

Dr. Shio Miyafuji — *+81 337261111*
Assistant Professor — *Tokyo Institute of Technology*
miyafuji@c.titech.ac.jp

PhD research mentor and collaborator

Professional Memberships

2023-2024 **ACM Special Interest Group on Computer-Human Interaction**, SIGCHI

Licence and Certification

2009 **Japanese-Language Proficiency Test (JLPT)**, N1
2012 **Vocational Training Instructor Licence**, Electronic and Computer Control

Skills

Programming Language

- Python, C/C++, C#, Matlab

Platforms & Tools

- TensorFlow, Unity, Visual Studio, Xcode, Android Studio

Languages

- Indonesian (native), Japanese (N1), English (Proficient)

Hardware & design

- Arduino, PCB, CAD, Digital Fabrication, Soft robotics, Pneumatic systems, Manufacturing technology